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WASTE 2.0: UPDATING CALIFORNIA'S ELECTRONIC-WASTE RECYCLING POLICIES FOR THE DIGITAL AGE

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“It has become appallingly obvious that our technology has exceeded
our humanity.”
—Albert Einstein

I. THE ELECTRONIC-WASTE PROBLEM

We live in an era when having the latest technology not only is important for increasing our standard of living, but also encompasses a huge part of our self-worth. Consumers feel compelled to own the latest and greatest coveted tech accessory with the most buzz. Cell phones can be customized to match one's outfits. Google Glass was the biggest trend at the 2013 New York Fashion Week, with models, magazine editors, and celebrities proudly showing off the gadget on posted Internet pictures.¹

American consumers are at the top of the technology food chain, and companies cater to their needs by quickly bringing the latest gadgets and upgrades to market. For example, major American cell phone companies now offer “frequent upgrade” plans² so consumers will have

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¹ Aly Weisman, *Google Glass Is the Biggest Trend at New York Fashion Week*, BUS. INSIDER (Sept. 10, 2013), www.businessinsider.com/google-glass-becomes-trend-at-new-york-fashion-week-2013-9.

² See T-MOBILE, www.t-mobile.com/phone-upgrade.html (stating that last visited May 6, 2014) (T-Mobile's Jump! plan allows customers to upgrade anytime for a small monthly fee under

the latest smartphone every year.³ Apple Inc. has released at least five generations of its iPad since its launch in 2010.⁴

Technology changes fast, so keeping up to date is nearly impossible for the consumer. For example, a consumer purchases an electronic product, and within a few short months, a newer product hits the shelves, causing one or more products to become replaced, outdated, or obsolete. In 2009, Americans collectively replaced around forty-seven million computers, twenty-seven million televisions, and 141 million mobile devices just to stay current.⁵ This trend of electronic consumption continues to increase exponentially, with no signs of slowing down.⁶ Many unwanted products gather dust in drawers or are disposed of in landfills, where their valuable recyclable materials, like gold and copper, are abandoned and cannot be recovered. The products thrown out with the garbage become electronic waste.

Electronic waste, or “e-waste,” is a popular, informal name for consumer and business electronic products that are at or near the end of their useful lives.⁷ Although there is no clear universal definition, products such as computers, televisions, stereos, and cell phones are commonly referred to as e-waste when obsolete, discarded, or recycled.⁸ As consumers buy new products to replace outdated electronics, and throw their products away, they literally create a mountain of unwanted products with no space for them.⁹ Problems arise when these products

certain conditions); AT&T, www.att.com/shop/wireless/next.html#fbid=gqMMOY864ir (last visited May 6, 2014) (stating that AT&T’s NEXT plan allows customers to upgrade a new smartphone every twelve or eighteen months under certain conditions); David Samberg, *Verizon Edge Device Payment and Early Upgrade Plan (Update)*, VERIZON, www.verizonwireless.com/news/article/2013/07/edge-device-payment-early-upgrade.html (Jan. 20, 2014) (stating that Verizon’s EDGE device payment and early upgrade plan allows customers to upgrade as soon as thirty days under certain conditions).

³ Gitte Laasby, *Frequent Upgrade Plans Are Costly for Cellphone Users*, MILWAUKEE WIS. J. SENTINEL, July 20, 2013, www.jsonline.com/watchdog/pi/frequent-upgrade-plans-are-costly-for-cellphone-users-b9957361z1-216311151.html.

⁴ *Identifying iPad Models*, APPLE, support.apple.com/kb/HT5452 (last modified Jan. 21, 2014).

⁵ *Statistics on the Management of Used and End-of-Life Electronics*, U.S. ENVTL. PROTECTION AGENCY, www.epa.gov/epawaste/conserve/materials/ecycling/manage.htm (last updated Nov. 14, 2012).

⁶ U.S. ENVTL. PROT. AGENCY, FACT SHEET: MANAGEMENT OF ELECTRONIC WASTE IN THE UNITED STATES 5 (July 2008), *available at* www.epa.gov/wastes/conserve/materials/ecycling/docs/fact7-08.pdf.

⁷ *What Is E-Waste?*, CAL. DEP’T OF RESOURCES RECYCLING & RECOVERY, www.calrecycle.ca.gov/electronics/whatisewaste/ (last updated Oct. 16, 2013).

⁸ *Id.*

⁹ *60 Minutes: Following the Trail of Toxic E-Waste* (CBS television broadcast Nov. 9, 2008), *available at* www.cbsnews.com/news/following-the-trail-of-toxic-e-waste/.

are discarded without concern for the environment.

E-waste does not need to become garbage. It could be recycled. Unfortunately, while many of these products can be reused, resold, or recycled,¹⁰ only an estimated twenty-five percent of these products are actually sent to recyclers.¹¹ However, recycling is not as popular or as safe as it should be. Even though most people agree that recycling is the ethical thing to do, most cite inconvenience, lack of understanding recycling programs, and out-of-pocket costs as reasons why they do not recycle.¹²

Alarming, many electronic products sent to U.S. recyclers are exported to developing countries,¹³ where the products are stripped of their valuable materials under unsafe conditions. Many of these countries lack health, safety, and environmental recycling regulations or the ability to enforce them.¹⁴ As a result, the unregulated recycling sites have caused severe human and environmental health problems. For example, water contamination from residual toxic wastes that is fifty percent higher than the U.S. Center for Disease Control's limit of lead levels in blood from children living and working around these sites.¹⁵

When electronic products are improperly disposed of or sent to unregulated recycling sites, the e-waste breaks down in the area without appropriate safeguards.¹⁶ Toxic substances like mercury, lead, and arsenic are then released into the ground, causing soil, water, and air contamination.¹⁷ These e-waste toxins are known to have caused cancer, respiratory illness, and reproductive problems.¹⁸ Also, the chance to reclaim valuable materials and safely recycle the toxic materials is lost forever under the mountain of garbage.¹⁹ Therefore, finding innovative and all-encompassing ways to reduce, reuse, and recycle electronics

¹⁰ *What Is E-Waste?*, *supra* note 7.

¹¹ *Statistics on the Management of Used and End-of-Life Electronics*, *supra* note 5.

¹² Ronnie Citron-Fink, *5 Reasons Why People Don't Recycle and 5 Reasons They Should*, CARE2 (Aug. 4, 2011), www.care2.com/greenliving/5-reasons-why-people-dont-recycle-and-5-reasons-they-should.html.

¹³ U.S. GOV'T ACCOUNTABILITY OFFICE, ELECTRONIC WASTE: EPA NEEDS TO BETTER CONTROL HARMFUL U.S. EXPORTS THROUGH STRONGER ENFORCEMENT AND MORE COMPREHENSIVE REGULATION 2 (Aug. 2008), *available at* www.gao.gov/new.items/d081044.pdf.

¹⁴ *Id.* at 5.

¹⁵ *Id.* at 22.

¹⁶ *The E-Waste Crisis Introduction*, E-STEWARDS, www.e-stewards.org/the-e-waste-crisis/ (last visited May 6, 2014).

¹⁷ *Id.*

¹⁸ *E-Waste: Overview*, SILICON VALLEY TOXICS COAL., www.svtc.org/our-work/e-waste/ (last visited May 6, 2014).

¹⁹ *The E-Waste Crisis Introduction*, *supra* note 16.

products is important in solving this e-waste crisis.

As the e-waste crisis grows, the rising mountain of discarded electronic products will quickly outgrow the limited landfills of this world.²⁰ This Comment examines California's approach to e-waste recycling and discusses areas of success as well as areas that need to be strengthened. First, this Comment reviews existing California e-waste recycling regulations and addresses where California's e-waste regulations are inefficient. Then, it covers current federal waste laws and pending e-waste-specific laws. Next, this Comment compares California's approach with the legislative actions of other states and countries that address the global e-waste crisis. Finally, this Comment recommends ways to reduce and manage e-waste that require minimal effort in order for California to strengthen and improve upon its existing e-waste laws.

II. CALIFORNIA E-WASTE REGULATIONS, ENFORCEMENT, AND PROBLEMS

With the growing amount of e-waste, California faces the challenge of reducing, recycling, reusing, or safely disposing of almost 212 million pounds of e-waste per year.²¹ Known worldwide as a leader in innovation and technology, California is home to some of the world's most influential technology manufacturers, like Apple, Cisco, Hewlett-Packard, and Intel.²² With so much innovation surrounding Californians, they purchase more than 2.2 million new computer systems each year.²³ As a result, more than 6,000 computers become obsolete in California every day.²⁴ With more computers and electronics being added daily to the home and work place, California is fast running out of space for these obsolete products.

To address health and environmental concerns stemming from e-waste, in 2003 California enacted what was then one of the most

²⁰ Andrew Del Prado, *E-Recycling: Why We Must and How We Can*, ECOLOGIST, www.theecologist.org/campaigning/2006217/erecycling_why_we_must_and_how_we_can.html (last visited May 6, 2014).

²¹ CAL. DEP'T OF RES. RECYCLING & RECOVERY, CALRECYCLE 2012 ENFORCEMENT REPORT 34 (Jan. 10, 2014), available at www.calrecycle.ca.gov/Publications/Documents/1485/20141485.pdf.

²² *Fortune 500: Our Annual Ranking of America's Largest Corporations*, CNN MONEY, (2014), money.cnn.com/magazines/fortune/fortune500/2012/states/CA.html.

²³ *Poison PCs and Toxic TVs: The Greatest Threat to the Environment You've Never Heard of*, CALIFORNIANS AGAINST WASTE, www.cawrecycles.org/issues/ca_e-waste/poison_pc_report (last visited May 6, 2014).

²⁴ *Id.*

stringent electronic recycling laws.²⁵ However, since then, twenty-four other states have passed better e-waste recycling laws that include stronger restrictions, expand the scope of covered electronic products, and increase manufacturer participation and support.²⁶ Over time, California's e-waste laws have become outdated and struggle with fraud, low participation rates, and high management expenses.²⁷ Existing California e-waste laws need to be revisited and updated in order to match states and countries with more sustainable practices.

A. EXISTING REGULATIONS

In 2003, California was the first state to address the e-waste issue head-on, by enacting a landmark electronic waste policy,²⁸ called the Electronic Waste Recycling Act (EWRA),²⁹ in order to encourage proper recycling, create convenient recycling opportunities, and reduce the amount of hazardous materials.³⁰ EWRA contains four major components to help California combat the e-waste crisis: required reporting on electronic devices sold, a funding system for the collection and recycling of electronic devices, government purchasing guidelines, and landfill bans.

First, EWRA imposes specific reporting requirements that keep manufacturers accountable for their actions and focuses efforts on reducing hazardous substances used in certain electronic products, known as covered electronic devices (CEDs), sold in California.³¹ CEDs currently include devices like televisions, monitors, and portable DVD players.³² Every CED manufacturer is required to submit a detailed annual report to the California Department of Resources Recycling and

²⁵ Electronic Waste Recycling Act of 2003, CAL. PUB. RES. CODE § 42461 (LexisNexis 2014).

²⁶ ELECS. TAKE BACK COAL., TEN LESSONS LEARNED FROM STATE E-WASTE LAWS 8-10 (May 10, 2011), available at www.electronicstakeback.com/wp-content/uploads/Lessons-Learned-from-State-E-waste-laws.pdf.

²⁷ SVTC Testifies at Oversight Hearing on E-waste, SILICON VALLEY TOXICS COAL., www.svtc.org/blog/e-waste/svtc-testifies-at-oversight-hearing-on-e-waste/ (last visited Oct. 12, 2013).

²⁸ *Electronic Waste Recycling Act of 2003: Covered Electronic Waste Payment System (SB 20/SB 50)*, CAL. DEP'T OF RESOURCES RECYCLING & RECOVERY, www.calrecycle.ca.gov/electronics/act2003/ (last updated Jan. 15, 2013).

²⁹ CAL. PUB. RES. CODE § 42461 (LexisNexis 2014); see Electronic Waste Recycling Act of 2003, CAL. PUB. RES. CODE § 42460 et seq. (LexisNexis 2014).

³⁰ CAL. PUB. RES. CODE § 42461 (LexisNexis 2014).

³¹ CAL. PUB. RES. CODE § 42465.2 (LexisNexis 2014).

³² CAL. CODE REGS. tit. 22, § 66260.201(e) (LexisNexis 2014).

Recovery (CalRecycle).³³ The report must include a list of recyclable materials in the manufacturer's products, the number of electronic devices sold, details of efforts to design the devices for recycling, an estimate of future sales, consumer information, and a list of retailers to which the manufacturer provided notice of which products will constitute hazardous waste when discarded.³⁴

A manufacturer must also make information available to consumers that describes where and how to return, recycle, and dispose of an electronic device.³⁵ Additionally, the report must include a list of all materials used in the manufacturer's products (including specific hazardous materials) by brand to show they are in compliance with California's Restriction of the Use of Certain Hazardous Substances (RoHS) law.³⁶ California's RoHS law prohibits manufacturers from selling CEDs that exceed set levels of lead, mercury, cadmium, and other metals.³⁷ The purpose behind the law is to limit the amount of hazardous metals that may find their way into landfills and eventually be released into the environment.³⁸

Second, EWRA implemented a funding system for the collection and recycling of CEDs,³⁹ known as the Advanced Recovery Fee (ARF) system.⁴⁰ The ARF system allows a retailer to collect a fee (currently \$6-\$10 depending on size of the screen) at the point of purchase from consumers.⁴¹ This fee covers the average cost of collecting, processing, and recycling discarded covered electronic devices by qualified handlers and recyclers.⁴² Then, the retailer remits these fees to the Board of Equalization (BOE), which deposits the fees into a state recycling fund called the Electronic Waste Recovery and Recycling Account.⁴³

³³ Electronic Waste Recycling Act of 2003, CAL. PUB. RES. CODE § 42465.2(a)(1) (LexisNexis 2014).

³⁴ Electronic Waste Recycling Act of 2003, CAL. PUB. RES. CODE § 42465.2(a)(1) (LexisNexis 2014).

³⁵ Electronic Waste Recycling Act of 2003, CAL. PUB. RES. CODE § 42465.2(a)(2) (LexisNexis 2014).

³⁶ CAL. HEALTH & SAFETY CODE § 25214.9-25214.10.2 (LexisNexis 2014).

³⁷ CAL. CODE REGS. tit. 22, § 66260.202 (LexisNexis 2014).

³⁸ *Id.*

³⁹ Electronic Waste Recycling Act of 2003, CAL. PUB. RES. CODE § 42472(a) (LexisNexis 2014).

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² CAL. DEP'T OF RES. RECYCLING & RECOVERY, CALRECYCLE 2011 ENFORCEMENT REPORT 35 (May 2013), available at www.calrecycle.ca.gov/Publications/Documents/1458/20131458.pdf.

⁴³ *California Electronic Waste Recycling Act*, CALIFORNIANS AGAINST WASTE, www.cawrecycles.org/issues/ca_ewaste/sb20 (last visited May 6, 2014).

Recyclers and handlers who are compliant with the Department of Toxic Substances Control (DTSC) regulations may recover their costs from the account after they submit receipts showing the amount (by weight) of CEDs collected.⁴⁴ CalRecycle reimburses the recyclers/handlers at a standard rate per pound of CEDs recovered and recycled.⁴⁵ Currently, only covered electronic waste originating from sources in California is eligible for payment in this program.⁴⁶

Third, EWRA directs CalRecycle to establish guidelines regarding purchases of CEDs by a state agency.⁴⁷ Under EWRA, state agencies are encouraged to use environmentally preferable purchasing methods.⁴⁸ These methods include considering purchasing goods and services shown to reduce impacts on health and the environment when compared to competing brands.⁴⁹ State agencies are also encouraged to check California's Department of General Services' Buying Green Guide for environmentally friendly goods and services.⁵⁰ By recommending environmentally conscious purchasing criteria, EWRA helps to ensure that environmentally friendly products are purchased to reduce the overall state generated e-waste.

Lastly, to motivate consumers to properly recycle and dispose of their CEDs, EWRA bans disposing of CEDs and other electronic waste in landfills.⁵¹ Concurrently, DTSC also recognizes a wide array of consumer electronic products as hazardous and prohibits them from being disposed in household trash, thus affecting thousands of consumer electronic devices, including, but not limited to, computers, peripherals, phones, VCRs, DVD players, stereos, and microwaves.⁵²

B. ENFORCEMENT

E-waste handling and recycling is a huge business in California. In 2011, California recyclers and handlers claimed over 197 million pounds of CEDs, which resulted in \$75 million in reimbursements from

⁴⁴ *Id.*

⁴⁵ CAL. DEP'T OF RES. RECYCLING & RECOVERY, *supra* note 42.

⁴⁶ *Id.*

⁴⁷ CAL. PUB. RES. CODE § 42475.3 (LexisNexis 2014).

⁴⁸ *Environmentally Preferable Purchasing (EPP)*, CAL. DEP'T OF RESOURCES RECYCLING & RECOVERY, www.calrecycle.ca.gov/epp/ (last updated May 8, 2013).

⁴⁹ *Id.*

⁵⁰ *Buying Green: California's Guide for Sustainable Purchasing*, CAL. DEP'T OF GEN. SERVICES, www.dgs.ca.gov/buyinggreen/Home/BuyersMain.aspx (last visited May 6, 2014).

⁵¹ CAL. PUB. RES. CODE § 42461(d) (LexisNexis 2014).

⁵² CAL. PUB. RES. CODE § 42463(e)(2) (LexisNexis 2014).

EWRA's ARF system.⁵³ Consequently, the BOE, CalRecycle, and DTSC have specific enforcement roles to ensure the goals of the EWRA are met.

From the start of the ARF system, BOE has ensured that the appropriate fees collected from consumers are remitted and deposited into the Electronic Waste Recovery and Recycling Account by retailers in order to fund the program. BOE reports any mismanagement, abuse, fraud, or delinquent fees by retailers to CalRecycle, which can levy penalties ranging from \$2,500 to \$25,000 per offense.⁵⁴

In addition to penalizing questionable retailer conduct, CalRecycle reviews all annual net-cost reports and adjusts the "standard payment rates based on calculated industry average net costs."⁵⁵ Then, CalRecycle carefully reviews all recycling claims to ensure that CEDs collected for recycling are eligible for reimbursement, processed correctly, and properly disposed of.⁵⁶ CalRecycle has the authority to adjust or deny payments to the recyclers/handlers based on improper, incomplete, or fraudulent documentation.⁵⁷ CalRecycle can also revoke or suspend a handler or recycler's license to participate if the handler or recycler fails to submit the annually required net-cost report.⁵⁸

Lastly, DTSC inspectors verify that handling and recycling facilities comply with e-waste storage, collection, and recycling regulations.⁵⁹ The department also sets the classifications of e-waste in order to help facilitate recycling and limit its disposal.⁶⁰ Specifically, DTSC adopted regulations designating certain e-waste as "universal waste," to allow for easier handling and transporting of e-waste under more relaxed rules.⁶¹ "Universal waste" is waste that poses lower immediate risks to people and the environment when properly managed, compared to hazardous waste, which calls for stricter handling and transporting processes.⁶²

C. KNOWN PROBLEMS IN CALIFORNIA'S E-WASTE REGULATIONS

As the amount of e-waste continues to grow each year, California

⁵³ CAL. DEP'T OF RES. RECYCLING & RECOVERY, *supra* note 42, at 2, 37.

⁵⁴ *Id.* at 36.

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ CAL. CODE REGS. tit. 22, § 66273.33.5(a) (LexisNexis 2014).

⁶¹ *Id.*

⁶² CAL. CODE REGS. tit. 22, § 66261.9 (LexisNexis 2014).

policymakers are desperately trying to think of better ways to regulate it. CalRecycle focuses on the motto of “reduce, reuse, and recycle.”⁶³ In order to keep this “mantra” going, CalRecycle needs to stop the problems burdening the success of its regulations. Many problems plaguing California’s e-waste regulations, such as accidental or intentional dumping and fraud are well known, yet not enough is being done to stop them.

1. *Accidental or Intentional Dumping*

Californians want to recycle.⁶⁴ In fact, California has done a great job in promoting awareness of its beverage recycling plan.⁶⁵ Californians recycled an astounding eighty-five percent of their beverage containers in 2013.⁶⁶ In contrast, Californians are estimated to recycle only five percent to fifteen percent of their used computers,⁶⁷ while most are in storage due to lack of knowledge of how or where to recycle these items.⁶⁸ A 2013 study on California’s efforts to ban electronic waste disposal in municipal landfills, by University of California Irvine professor Jean-Daniel M. Saphores, shows that the efforts have been mostly ineffective.⁶⁹ His study estimates that over eighty million obsolete television sets and more than 200 million unused older cell phones, along with CEDs, are idly sitting in storage across California.⁷⁰

More often than not, these electronic devices get tossed illegally into the trash.⁷¹ Though California has strict rules on disposing electronic devices straight into landfills, the rules are hard to enforce. The tossed devices are usually small, easily discarded, and basically impossible to

⁶³ *What Is E-Waste?*, *supra* note 7.

⁶⁴ See I LOVE A CLEAN SAN DIEGO, CRV 101: A SIMPLE GUIDE TO BOTTLE AND CAN RECYCLING 2 (undated), available at www.ilacsd.org/pdf/brochures/crv101_recycling_toolkit.pdf.

⁶⁵ CAL. DEP’T OF CONSERVATION, SIX-MONTH REPORT OF BEVERAGE CONTAINER RECYCLING & SIGNIFICANT CARBON REDUCTIONS 1 (2008), www.conservation.ca.gov/index/news/Documents/Recycling%20Rate%20Report%2010-2-2008.pdf.

⁶⁶ *Biannual Report of Beverage Container Sales, Returns, Redemption, and Recycling Rates*, CAL. DEP’T OF RESOURCES RECYCLING & RECOVERY, www.calrecycle.ca.gov/bevcontainer/Rates/BiannualRpt/default.htm (last updated May 9, 2014).

⁶⁷ *Poison PCs and Toxic TVs: The Greatest Threat to the Environment You’ve Never Heard of*, *supra* note 23.

⁶⁸ *About E-Waste*, OMNI TECHNICS INC., www.ca-recycle.com/resources.html (last visited May 6, 2014).

⁶⁹ *E-Waste Disposal Bans “Not Working,” ENVTL. LEADER* (Sept. 13, 2013), www.environmentalleader.com/2013/09/13/e-waste-disposal-bans-not-working/.

⁷⁰ *Id.*

⁷¹ Douglas Main, *E-Waste Trashing Bans Don’t Work, Researcher Says*, LIVESCIENCE (Sept. 10, 2013), www.livescience.com/39521-e-waste-bans-fail.html.

police. Even if an individual is caught illegally disposing of electronic products, the penalty for improperly disposing e-waste is at most a warning.⁷²

Also, California's current e-waste law covers only CEDs (computers, monitors, and portable DVD players), for which the recycling fee is collected upfront by retailers under the ARF system and then remitted to CalRecycle for disbursement. For the individual consumer looking to properly recycled non-CEDs, options for recycling are virtually nonexistent. Consumers who want to recycle their non-CEDs must pay a recycling price tag of \$10 to \$30 per unit⁷³ directly to recyclers or handlers in order to cover the high cost of material collection, handling, and processing. Sometimes this fee can be enough to deter a consumer from properly disposing of his or her electronic device; instead, the consumer discreetly tosses the device illegally into the trash. Even though the recycling fee is less expensive than the estimated \$25 to \$50 per unit cost for landfill disposal, the current system lacks the convenience and the incentive for consumers to pay the fee.⁷⁴

2. *Fraud and Inadequate Managing Practices*

Since its inception, California's ARF program has been ill-equipped to adequately monitor the numerous claims submitted by recyclers requesting reimbursement. The ARF program funds a multi-million-dollar industry, paying recyclers over \$320 million to collect and recycle CEDs.⁷⁵ This promise of great financial reward attracts fraudulent claims from dishonest recyclers who attempt to exploit the program, costing the government a total of tens of millions of dollars.⁷⁶ For example, dishonest recyclers include in their reimbursement claims electronic devices brought in from out of state⁷⁷ and inflate the amounts of e-waste received from other organizations.⁷⁸

From 2008 to 2010, CalRecycle rejected about \$23 million in faulty

⁷² *Id.*

⁷³ *Poison PCs and Toxic TVs: The Greatest Threat to the Environment You've Never Heard of*, *supra* note 23.

⁷⁴ *Id.*

⁷⁵ Tom Knudson, *Recycling E-Waste Yields Unexpected Byproduct: Fraud*, PORTLAND PRESS HERALD, Aug. 1, 2010, www.pressherald.com/business/recycling-e-waste-yields-unexpected-byproduct_2010-08-01.html?pagenum=full.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Id.*

or fraudulent e-waste claims submitted by recyclers.⁷⁹ In 2011, almost half of all submitted claims had some sort of payment re-adjustment, resulting in a 2.3 percent reduction of claims.⁸⁰ However, state and industry officials estimate as much as \$30 million in ineligible claims may have been inadvertently paid.⁸¹ While DTSC has taken several administrative actions against noncompliance, such as imposing fines or revoking licenses, the first criminal prosecution for filing false payment claims and illegal storage of hazardous e-waste did not occur until recently.⁸²

In addition to fraudulent claims, CalRecycle also faces problems with enforcing EWRA's reporting requirement. Under EWRA, CED manufacturers are required to submit yearly reports to CalRecycle covering specific data.⁸³ Despite the strict deadline, some CED manufacturers still submit incomplete reports or late reports, and some fail to submit reports at all.⁸⁴

III. FEDERAL E-WASTE REGULATIONS AND ENFORCEMENT

A. PARTIAL FEDERAL E-WASTE COVERAGE

Although the United States currently does not have a law directly addressing e-waste, in 1976 Congress enacted the Resource Conservation and Recovery Act (RCRA), which applies to some areas of e-waste.⁸⁵ RCRA's objectives are "to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner."⁸⁶ Therefore, RCRA regulates all solid and hazardous waste management activities in the United States, including treatments, storage, transports,

⁷⁹ *Id.*

⁸⁰ CAL. DEP'T OF RES. RECYCLING & RECOVERY, *supra* note 42.

⁸¹ Knudson, *supra* note 75.

⁸² News Release, Dep't of Toxic Substances Control, State Announces First Criminal Plea Agreement in E-Waste Fraud Case 1 (Aug. 3, 2012), *available at* www.dtsc.ca.gov/PressRoom/upload/News-Release-T-07-121.pdf.

⁸³ *Manufacturer Reporting Information*, CAL. DEP'T OF RESOURCES RECYCLING & RECOVERY, www.calrecycle.ca.gov/Electronics/Act2003/Manufacturer/Reporting/ (last updated July 6, 2010).

⁸⁴ *Id.*

⁸⁵ 42 U.S.C.S. § 6901 et seq. (LexisNexis 2014).

⁸⁶ *Resource Conservation and Recovery Act (RCRA)*, U.S. ENVTL. PROTECTION AGENCY, www.epa.gov/oecaagct/lrca.html (last updated Oct. 30, 2013).

and disposals.⁸⁷

Through the RCRA's regulation of all waste, a small portion of electronic products falls under the RCRA as hazardous waste when the amount collected weighs more than 220 pounds per month, is generated by non-households, has a hazardous-waste characteristic like causing or significantly contributing to a serious human health or environmental hazard,⁸⁸ and is sent for disposal.⁸⁹ Once electronic products fall within RCRA's hazardous-waste definition, strict guidelines apply, including a requirement of detailed reports on how the waste is treated, handled, transported, labeled, and disposed of.⁹⁰

However, items that could fall within RCRA's hazardous-waste definition may be exempted from hazardous-waste treatment by the EPA. The EPA ensures that federal laws like the RCRA are enforced effectively and fairly.⁹¹ In carrying out its enforcement duty, the EPA may classify electronic items that have the potential of being reused as non-waste or non-hazardous waste since they are capable of reuse;⁹² with the result that many household electronic products are exempted from being labeled as waste.⁹³

Even if an electronic product is labeled as "hazardous waste," the EPA allows for several "exclusions" and "exemptions" to apply in order to encourage more reuse and recycling.⁹⁴ An exclusion prevents an electronic product with a potential for reuse from being labeled as "waste."⁹⁵ An exemption acknowledges certain electronic products as waste but does not classify them as hazardous.⁹⁶ Unfortunately, this exclusion and exemption process actually contributes to the e-waste crisis, because many e-waste items are categorized as either non-hazardous waste or non-waste. Thus, resellers and recyclers can collect many obsolete, out-of-date, broken, or unwanted electronics, and ultimately dismantle or dispose of them in an unsafe manner, without regard to the strict RCRA waste management rules.

⁸⁷ 42 U.S.C.S. § 6902 (LexisNexis 2014).

⁸⁸ 42 U.S.C.S. § 6903(5) (LexisNexis 2014).

⁸⁹ ROBERT TONETTI, U.S. ENVTL. PROT. AGENCY, EPA'S REGULATORY PROGRAM FOR "E-WASTE" 10 (Oct. 2007), available at www.epa.gov/osw/conservation/materials/ecycling/docs/e-wasteregs.pdf.

⁹⁰ 42 U.S.C.S. § 6907 (LexisNexis 2014).

⁹¹ *Our Mission and What We Do*, U.S. ENVTL. PROTECTION AGENCY, www2.epa.gov/aboutepa/our-mission-and-what-we-do (last updated Mar. 16, 2014).

⁹² 42 U.S.C.S. § 6902(a)(1) (LexisNexis 2014).

⁹³ TONETTI, *supra* note 89, at 7.

⁹⁴ 40 C.F.R. § 266.80 (LexisNexis 2014).

⁹⁵ *Id.*

⁹⁶ *Id.*

The RCRA regulations also cover cathode ray tubes (CRTs) removed from electronic products. A CRT is the glass video display component commonly found in computer monitors and televisions; because it contains high levels of lead, it could be considered hazardous waste under RCRA labeling rules.⁹⁷ However, the regulation, known as the CRT Rule, excludes this component from the RCRA's "hazardous waste" label, in order to encourage more recycling and reusing of used CRTs.⁹⁸

As long as a recycler follows the CRT Rule's requirements, a conditional exclusion to the RCRA waste labeling will apply. Thus, items with CRTs can be excluded from being labeled as hazardous waste and do not have to follow the RCRA's hazardous-waste recycling regulations. However, CRT disposal does not fall under the CRT Rule and still must follow RCRA's hazardous-waste disposal requirements.⁹⁹

Although the CRT Rule helps curb some e-waste from ending up improperly disposed of in a landfill, there are still many non-CRT electronic items that are easily discarded into landfills either discreetly or accidentally by owners unmotivated to take the extra steps of recycling them properly. Overall, RCRA does not have much influence on whether used electronic devices, other than CRTs, are going to the landfill or being exported to developing nations.

B. PENDING FEDERAL E-WASTE LAW

To date, Congress has been unsuccessful in passing legislation regarding e-waste recycling and disposal. A bill known as the Responsible Electronics Recycling Act (RERA) was introduced in 2010. However, after its introduction, the RERA bill was referred to committee and never passed.¹⁰⁰ RERA was reintroduced in 2011 with the same results.¹⁰¹ On July 23, 2013, RERA was reintroduced¹⁰² with bipartisan support.¹⁰³ It was referred to the House Subcommittee on Environment

⁹⁷ 40 C.F.R. § 261.4(a)(22) (LexisNexis 2014).

⁹⁸ 40 C.F.R. § 261.4(a)(22)-(24) (LexisNexis 2014).

⁹⁹ TONETTI, *supra* note 89, at 14.

¹⁰⁰ Responsible Electronics Recycling Act, H.R. 6252, 111th Cong. (2010); *see also* GOVTRACK.US, www.govtrack.us/congress/bills/111/hr6252 (noting that H.R. 6252 died in committee).

¹⁰¹ *See* Responsible Electronics Recycling Act, H.R. 2284, 112th Cong. (2011).

¹⁰² Responsible Electronics Recycling Act, H.R. 2791, 113th Cong. (2013).

¹⁰³ *Federal Legislation and Policy on E-Waste*, ELECS. TAKE BACK COALITION, www.electronicstakeback.com/promote-good-laws/federal-legislation/ (last visited May 6, 2014).

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on September 24, 2013, where it is currently under consideration.¹⁰⁴

If enacted, RERA would combat unsafe recycling by restricting the exportation of untested and nonworking electronics from the United States to countries that are not members of the Organization of Economic Cooperation and Development (OECD) or the European Union (EU).¹⁰⁵ OECD is a joint partnership consisting of several international governments focused on promoting “policies that will improve the economic and social well-being of people around the world.”¹⁰⁶ Countries like China, India, and Ghana are considered as developing countries by the OECD and are not members.¹⁰⁷ Many U.S. recyclers export used electronics to these developing countries to be dismantled under unsafe health conditions.¹⁰⁸

Crude and unsafe recycling techniques, such as open-air burning, expose both adult and child workers to a range of hazardous substances like lead and cadmium, which have been shown to cause major health problems.¹⁰⁹ Many times these workers work outside with little protection, inhaling and absorbing these chemicals.¹¹⁰ Countries receiving used electronics also lack effective environmental controls. The lack of regulation allows open-air burning and open acid baths to extract valuable materials, letting residual toxic waste enter into the environment.¹¹¹

RERA would also require the EPA to develop stricter, more concise procedures for identifying electronic products whose materials pose a potential hazard to human health and the environment.¹¹² Further, RERA would establish criminal penalties for people and companies who knowingly export restricted e-waste to non-OECD countries.¹¹³ Overall, RERA would help reduce environmental and health risks due to

¹⁰⁴ Responsible Electronics Recycling Act, H.R. 2791, 113th Cong. (2013).

¹⁰⁵ Responsible Electronics Recycling Act, H.R. 2791, 113th Cong. § 2 (2013) (proposing to add § 3025(e)(1) to Solid Waste Disposal Act, 42 U.S.C. § 6921 et seq.).

¹⁰⁶ *About the OECD*, ORG. FOR ECON. CO-OPERATION & DEV., www.oecd.org/about/ (last visited May 6, 2014).

¹⁰⁷ *Members and Partners*, ORG. FOR ECON. CO-OPERATION & DEV., www.oecd.org/about/membersandpartners/ (last visited May 6, 2014).

¹⁰⁸ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 13, at 6.

¹⁰⁹ *Electronic Waste*, WORLD HEALTH ORG., www.who.int/ceh/risks/ewaste/en/ (last visited May 6, 2014).

¹¹⁰ *Id.*

¹¹¹ U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 13, at 18.

¹¹² Responsible Electronics Recycling Act, H.R. 2791, 113th Cong. § 2 (2013) (proposing to add § 3025(c) to Solid Waste Disposal Act, 42 U.S.C. § 6921 et seq.).

¹¹³ Responsible Electronics Recycling Act, H.R. 2791, 113th Cong. § 3(a) (2013) (proposing to amend 42 U.S.C. § 6928(d)).

improper e-waste disposal.¹¹⁴

RERA would continue allowing exports of tested and working used electronics for the purpose of reuse.¹¹⁵ Manufacturers could also export recalled products and products under warranty.¹¹⁶ However, RERA would impose a complete ban on exports of consumer electronic products, parts, and materials that contain toxic chemicals (defined by the EPA) to non-OECD or EU countries for any reason,¹¹⁷ in order to eliminate the possibility that such products could be subjected to unregulated and unsafe dismantling practices. The bill introducing RERA would adopt OECD's e-waste regulations, which contain policies adopted by most other developed nations via international treaties like the Basel Convention, which is discussed in detail below.¹¹⁸

Though the bill has yet to pass, RERA continues to garner more support from major electronics manufacturers, retailers, watchdog groups, and members of Congress with each try.¹¹⁹ If passed, RERA would help fight the e-waste crisis by having the federal government lead by example and give current state e-waste regulations more regulatory support.

C. ENVIRONMENTAL PROTECTION AGENCY'S PARTNERSHIP WITH E-STEWARDS AND RESPONSIBLE RECYCLING PRACTICES

Despite the lack of federal authority specifically covering e-waste regulations, the EPA still addresses the e-waste issue pursuant to its mission to protect the U.S. population from significant risks to human health and the environment.¹²⁰ The EPA attempts to combat the e-waste crisis by encouraging every U.S. electronic recycler and handler to become certified by an independent third-party auditor.¹²¹ The EPA does not endorse any one certified process but encourages recyclers to be accredited by one of two certification programs.¹²²

¹¹⁴ *The E-Waste Problem*, TOTAL RECLAIM, www.totalreclaim.com/e-waste_problem.html (last visited May 6, 2014).

¹¹⁵ *Federal Legislation and Policy on E-Waste*, *supra* note 103.

¹¹⁶ Responsible Electronics Recycling Act, H.R. 2791, 113th Cong. § 2 (2013) (proposing to add § 3025(b)(3)(B)(iv) to Solid Waste Disposal Act, 42 U.S.C. § 6921 et seq.).

¹¹⁷ *Id.* (proposing to add § 3025(a) to Solid Waste Disposal Act, 42 U.S.C. § 6921 et seq.).

¹¹⁸ Curt Harler, *Trash or Treasure?*, RECYCLING TODAY (Apr. 1, 2013), www.recyclingtoday.com/rt0413-responsible-electronics-recycling-act.aspx.

¹¹⁹ *Federal Legislation and Policy on E-Waste*, *supra* note 103.

¹²⁰ *Our Mission and What We Do*, *supra* note 91.

¹²¹ *Certification Programs for Electronics Recyclers*, U.S. ENVTL. PROTECTION AGENCY, www.epa.gov/wastes/conservation/materials/recycling/certification.htm (last updated on Mar. 20, 2014).

¹²² *Id.*

Currently, e-Stewards and Responsible Recycling Practices (R2) are the only third-party accredited auditors with certification programs.¹²³ “Specifically, these certification programs are based on strong environmental standards which maximize reuse and recycling, minimize exposure to human health or the environment, ensure safe management of materials by downstream handlers, and require destruction of all data on used electronics.”¹²⁴

The main differences between the two certification programs are their rules on e-waste disposal and exportation. E-Stewards prohibit any of its certified recyclers from exporting electronic products to developing countries unless the products have been tested to be functioning and working.¹²⁵ E-Stewards also ban its recyclers from landfilling or incinerating e-waste.¹²⁶

In contrast, R2 allows its recyclers to export certain electronic products, even if they include mercury, lead, or other toxic chemicals, as long as the countries receiving them produce documentation accepting them.¹²⁷ Some argue that although R2 discourages dumping or incinerating e-waste abroad, the language of R2 creates a loophole in that it allows the receiving countries to dump or incinerate if circumstances are “beyond their control.”¹²⁸ Nevertheless, R2 does provide general guidance on disposing e-waste by requiring its recyclers to “develop and use environmental, health and safety management systems of their choosing.”¹²⁹ In the end, either certification program a recycler chooses will significantly advance environmentally sound recycling in the end.

In order for a recycler to qualify for certification, it must meet the selected certification program’s specific standards and follow the safe recycling methods and safe management practices set by the program. Certified electronics recyclers promote good practices and provide important benefits like reducing human health and environmental impacts, reducing energy use, and increasing access to reusable electronic products.¹³⁰ The EPA, along with several states, encourages consumers and companies to recycle their used electronics through a

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ Francesca Lyman, *The Ever-Changing Landscape of E-Waste Recycling*, POPULAR MECHANICS, (May 6, 2010), available at www.popularmechanics.com/science/environment/recycling/changing-e-waste-recycling-landscape.

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Certification Programs for Electronics Recyclers*, *supra* note 121.

certified e-Stewards or R2 recycler.¹³¹

Although the EPA does not directly endorse either program, it recognizes the value provided by both of these certification programs and participates on their committees tasked with revising and updating their e-waste recycling standards.¹³² Again, because the EPA supports these standards, it cannot force the agencies to participate and can only invite recyclers to participate. The EPA cannot audit the agencies for conformance to these standards until it is authorized by Congress to adopt regulations specific to e-waste.¹³³

IV. ALTERNATIVE PLANS

A. INTERNATIONAL STRATEGIES ON HANDLING E-WASTE

In light of the growing mountain of e-waste, international communities have banded together to find new and effective ways to combat the e-waste problem. While other countries have collaborated to take on this global problem, the United States has yet to ratify and follow any of the international e-waste regulations or standards.¹³⁴

1. *Basel Convention*

In the 1980s, shocking reports surfaced about the discovery of exported toxic e-waste in Africa and other developing countries.¹³⁵ Several of these countries lacked proper recycling methods to safely extract valuable materials left in the electronic devices. The improper extraction methods caused severe problems to human health and the environment.¹³⁶ In response to these reports, the Conference of Plenipotentiaries in Basel, Switzerland, adopted the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, known commonly as the Basel Convention.¹³⁷ The Basel

¹³¹ *Regulations/Standards*, U.S. ENVTL. PROTECTION AGENCY, www.epa.gov/waste/conserve/materials/ecycling/rules.htm (last updated Nov. 7, 2013).

¹³² *Certification Programs for Electronics Recyclers*, *supra* note 121.

¹³³ *Regulations/Standards*, *supra* note 131.

¹³⁴ *Chapter V—Basel Convention*, U.S. ENVTL. PROTECTION AGENCY, www.epa.gov/osw/hazard/international/basel3.htm (last updated July 24, 2013).

¹³⁵ *Overview*, BASEL CONVENTION, www.Basel.int/theconvention/overview/tabid/1271/default.aspx (last visited May 6, 2014).

¹³⁶ Basel Action Network, *E-Stewardship: Taking Responsibility in the Information Age*, VIMEO (Mar. 23, 2010), www.vimeo.com/10383952.

¹³⁷ *Overview*, *supra* note 135.

Convention is an international treaty designed to protect human health and the environment by reducing exports of hazardous waste between countries, in particular exports from developed countries to less developed countries.¹³⁸

The Basel Convention provisions center around two major waste movement restrictions. The first restriction limits exporting e-waste to other countries. E-waste exporting can occur only if the exporting country does not have sufficient disposal capacity or disposal sites that can dispose of the waste in an environmentally sound manner or the wastes are used as a raw material for recycling and recovery industries in the importing country.¹³⁹

Further, the Basel Convention “prohibits movement of waste between parties to the convention and non-parties, except when these movements occur under an equivalent bilateral or multilateral agreement. The bilateral or multilateral agreement must provide an equally sound management structure for transboundary movements of waste.”¹⁴⁰ Unfortunately, the United States has signed the Convention, but has not ratified it.¹⁴¹ Until the United States ratifies the Basel Convention, it cannot become a Basel party.¹⁴² Therefore, U.S. exporters and importers do not have to comply with the Basel Convention’s terms.¹⁴³

2. *The European Union’s Waste Electrical Electronic Equipment Directive*

The European Council enacted the Waste Electrical Electronic Equipment Directive (WEEE) in 2003 to promote the reuse and recycling of electronic devices in order to reduce the quantity of e-waste and eliminate e-waste altogether.¹⁴⁴ WEEE also sets out to improve the environmental performance of recyclers and handlers involved in e-waste management.¹⁴⁵ In addition to eliminating e-waste and protecting human health and the environment, the EU also takes several measures to restrict the use of hazardous substances, under the RoHS directive, in

¹³⁸ Chapter V—Basel Convention, *supra* note 134.

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Waste Electrical and Electronic Equipment*, EUROPA, www.europa.eu/legislation_summaries/environment/waste_management/121210_en.htm (last updated Feb. 23, 2010).

¹⁴⁵ *Id.*

electronic devices.¹⁴⁶ WEEE places the majority of its implementation, recovery, recycling, and reusing upon manufacturers¹⁴⁷ and not on consumers. For example, manufacturers are required to accept their own products back from consumers free of charge and also to apply the best available treatment for the recovery and recycling of their products.¹⁴⁸

While the U.S. RCRA law covers only electronic devices with CRTs, WEEE covers a broader scope, including CRTs as well as small and large household appliances, consumer equipment, toys, telecommunication equipment, and more.¹⁴⁹ Under WEEE, manufacturers of WEEE listed CEDs not only are encouraged to design their products for easier dismantling but also are required to “apply the best available treatment, recovery, and recycling techniques” and provide financial support for collection and treatment.¹⁵⁰

Even though the U.S. Constitution does not allow states to directly legislate on matters of international trade,¹⁵¹ California has taken some of the best strategies from these international directives and incorporated them into the state’s e-waste laws. For example, California’s RoHS law is modeled after a portion of the WEEE that restricts manufacturers from selling certain electronic devices that contain toxic chemical levels exceeding a certain level.¹⁵²

B. BEST PRACTICES FROM OTHER STATES

Since there are no federal laws specifically mandating e-waste recycling, states are left with the task of monitoring and dictating how e-waste is to be collected and recycled within their own borders.¹⁵³ So far, twenty-five states have passed legislation mandating statewide e-waste recycling.¹⁵⁴ Most of these laws prohibit dumping e-waste in landfills and require that e-waste be recycled.¹⁵⁵ Other states have noticed the

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Why Laws Aren’t Enough*, E-STEWARDS, www.e-stewards.org/the-e-waste-crisis/why-arent-current-laws-enough/ (last visited May 6, 2014).

¹⁵² *Restrictions on the Use of Certain Hazardous Substances (RoHS) in Electronic Devices*, CAL. DEP’T TOXIC SUBSTANCES CONTROL, www.dtsc.ca.gov/hazardouswaste/rohs.cfm (last visited May 6, 2014).

¹⁵³ *Why Laws Aren’t Enough*, *supra* note 151.

¹⁵⁴ ELECS. TAKE BACK COAL., *supra* note 26, at 1.

¹⁵⁵ *History of State Legislation*, ELECS. TAKE BACK COALITION, www.electronicstakeback.com/promote-good-laws/state-legislation-history/ (last visited May 6,

inadequacies of California's e-waste program and, instead of following California's model, have implemented programs that shift the responsibility of recycling directly onto manufacturers, known as "producer responsibility."¹⁵⁶

"Producer responsibly" places a shared responsibility for end-of-life management of consumer products on the manufacturers of electronic goods, while encouraging product designs that take into account break-down and dismantling.¹⁵⁷ Under the "producer responsibility" model, producers are asked to contribute to (depending on the state) the costs associated with collecting and recycling the goods.¹⁵⁸ Out of the twenty-five states that have e-waste laws, twenty-three of them chose to use the "producer responsibility" approach over California's "consumer fee" approach.¹⁵⁹ The "producer responsibility" approach eases the financial burden placed upon local governments to create and regulate the infrastructure needed to deal with the ever-increasing e-waste stream.¹⁶⁰ Instead of burdening all taxpayers with the bill for the actions of some, this approach makes "manufacturers and consumers cover the full costs of their actions."¹⁶¹

Three states that have passed e-waste laws using the "producer responsibility" approach are New York, Oregon, and Washington.¹⁶² In addition to using this approach, these states also have some of the most effective and forward-thinking e-waste laws to date. In 2010, New York enacted one of the most comprehensive e-waste laws among all the states by covering a broader scope of products, requiring product manufacturers to take financial responsibility for collection and recycling, and allowing free recycling for a wider range of consumers.¹⁶³ Oregon and Washington have two of the most successful e-waste recycling laws. Since their e-waste collection start date, Oregon and Washington have collected the highest volume of e-waste per capita.¹⁶⁴

Several factors come into play in making the Oregon, Washington, and New York, e-waste recycling laws so successful:

2014).

¹⁵⁶ Knudson, *supra* note 75.

¹⁵⁷ ELECS. TAKE BACK COAL., *supra* note 26, at 1.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Zero Waste: Producer Responsibility*, ECO-CYCLE, www.ecocycle.org/zerowaste/overview/producer-responsibility (last visited May 6, 2014).

¹⁶¹ *Id.*

¹⁶² ELECS. TAKE BACK COAL., *supra* note 26, at 1.

¹⁶³ N.Y. ENVTL. CONSERV. LAW §§ 27-2601 to -2621 (LexisNexis 2014).

¹⁶⁴ ELECS. TAKE BACK COAL., *supra* note 26, at 1.

1. **Convenience:** Both Oregon and Washington establish convenient collection sites by requiring collection in areas where the county or city population is over 10,000 people.¹⁶⁵ In fact, ninety-two percent of citizens living in Washington have one or more collection sites within ten miles of their homes.¹⁶⁶
2. **Allowance of various collector types:** All three states use the “producer responsibility” approach, under which manufacturers are required to “fairly compensate” collectors for collection and recycling the electronic goods.¹⁶⁷ This in turn encourages a variety of collectors—like government municipalities, recyclers, handlers, and nonprofits—to participate, adding to the convenience factor.
3. **Larger scope of products eligible for free recycling:** The first states to pass e-waste laws limited the types of products eligible for free recycling, by using very specific statutory language. Like California, these states’ laws included only computers, monitors, and laptops.¹⁶⁸ Recent state bills expanded on the range of products. For example, Oregon and Washington allow free recycling of televisions, which made up for over sixty percent of electronic products recycled.¹⁶⁹ Oregon recently amended its law to include printers, keyboards, and computer peripherals, starting in 2015.¹⁷⁰ With the continuing emergence of new products, New York enacted a broader scope of recyclable products by using more generalized language in its law to include computer peripherals and small electronic equipment.¹⁷¹

¹⁶⁵ *Id.* at 2.

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* at 3.

¹⁶⁸ *Id.* at 6.

¹⁶⁹ *Id.*

¹⁷⁰ ELECS. TAKE BACK COAL., SCOPE OF PRODUCTS IN E-WASTE LAWS (Oct. 5, 2011), available at www.electronicstakeback.com/wp-content/uploads/Scope_of_Product_in_Ewaste_Laws.pdf.

¹⁷¹ *Id.*

V. PROPOSAL FOR STRENGTHENING CALIFORNIA'S E-WASTE POLICY

Currently, California's ARF system is the only "consumer fee" approach used in the country.¹⁷² No other state or international law has followed California's model after observing California's problems with managing the system and combating fraud. While the ARF system covers some costs of recycling, the fee is collected only from consumers purchasing certain electronic products in California. California's transplant population is higher than the national average.¹⁷³

With more and more people moving into California,¹⁷⁴ the electronic products these transplants bring in are not qualified for the State's e-waste recycling program, as they were purchased out-of-state. It is too difficult and almost impossible to monitor where these products originate from. With the program plagued with fraud,¹⁷⁵ and with funding running out,¹⁷⁶ California needs to take a close look at its current practices and amend its laws in order to keep up with the fast-paced world of technology.

First, California should follow the European WEEE directive, Basel, New York, and other states by switching over to a "producer responsibility" model. Currently, manufacturers bear no responsibility for the toxic chemicals their products produce when they become e-waste in California. Manufacturers should be made responsible for paying for the cost of collecting, recycling, or disposing electronic devices.

Companies like Apple and Hewlett-Packard already have their own extensive recycling programs that are in compliance with the Basel Convention.¹⁷⁷ Other companies, like Sony, Dell, and Best Buy, have joined the EPA's 2013 electronics recycling challenge, known as the Sustained Materials Management electronics challenge (SMM).¹⁷⁸ The SMM challenge is voluntary. If a company chooses to participate in SMM, it promises to increase the number of electronics collected, to

¹⁷² ELECS. TAKE BACK COAL., BRIEF COMPARISON OF STATE LAWS ON ELECTRONICS RECYCLING 6 (Sep. 19, 2013), available at www.electronicstakeback.com/wp-content/uploads/Compare_state_laws_chart.pdf.

¹⁷³ Hans Johnson, *California's Population*, PUB. POL'Y INST. CAL. (May 2011), www.pplic.org/main/publication_show.asp?i=259.

¹⁷⁴ Wyatt Buchanan, *CA Population Grows to 37.9 Million*, SFGATE (May 1, 2013), www.sfgate.com/news/article/CA-population-grows-to-37-9-million-4480348.php.

¹⁷⁵ Knudson, *supra* note 75.

¹⁷⁶ *Poison PCs and Toxic TVs: The Greatest Threat to the Environment You've Never Heard of*, *supra* note 23.

¹⁷⁷ Jeremy Carroll, *HP, Apple Don't Join EPA Recycling Challenge*, PLASTIC NEWS (Jan. 3, 2013), www.plasticsnews.com/article/20130103/NEWS/301039998.

¹⁷⁸ *Id.*

send 100 percent of them to an R2 or e-Stewards certified recycler by the third year of the company's participation, and to publish a public report on the company's efforts.¹⁷⁹

This approach would cover all electronic products regardless of where they were purchased. California would no longer have to worry about replenishing funds and regulating for fraud and inaccurate reports. Manufacturers would be financially motivated to look for more efficient, more cost-effective ways in designing their products to be reusable, longer lasting, and easier to dismantle. Additionally, if manufacturers covered the collecting and recycling costs, it would create a larger monetary resource pool, and more private and public businesses would be motivated to enter the recycling business.

Second, California's current scope of electronic products eligible for free recycling is too narrow. Consumers want a one-stop place where they can bring back all of their electronic goods, not just televisions, monitors, and portable DVD players. Many electronic products were nonexistent when EWRA was passed in 2003. With the ongoing emergence of new products, the current narrow definitions of products for reuse and recycling eliminate a lot of electronic products that would be ideal for reuse and recycling. WEEE and newer laws passed by New York and Illinois contain general language that includes a broader range of qualified products, like game consoles, large and small household appliances, and computer and television peripherals.¹⁸⁰

Also, all products eligible for recycling should be clearly marked with an easy-to-understand symbol as a reminder and an indicator of recyclability. For example, WEEE member countries adopted an internationally recognized symbol of a crossed out trash bin with a thick solid black line underneath to be placed on certain electronic equipment as a reminder not to throw into the general landfill.¹⁸¹ If California accepted more recyclable products and promoting more awareness, consumers would more likely make the effort to recycle, as it would be easier for them to bring back all or most their unwanted electronic items.

Third, California needs to encourage consumers to reuse and not just recycle. California's current model incentivizes recyclers only for the units recycled and not reused. This leads to a higher number of

¹⁷⁹ *Electronics Challenge*, U.S. ENVTL. PROTECTION AGENCY, www.epa.gov/epawaste/conservation/smm/electronics/index.htm (last updated Jan. 2, 2014).

¹⁸⁰ ELECS. TAKE BACK COAL., *supra* note 172.

¹⁸¹ Council Directive 2002/96/EC, art. 11(2), 2003 O.J. (L 37) 31; *see also* EUROPEAN COMM. FOR ELECTROTECHNICAL STANDARDIZATION, MARKING OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN ACCORDANCE WITH ARTICLE 11(2) OF DIRECTIVE 2002/96/EC (WEEE) (Jan. 2005), *available at* www.lgintl.com/pdf/Wheelie_Bin_Marking.pdf.

reusable products sent for recycling even though CalRecycle's top priority is to reduce the amount of e-waste.

A great alternative to recycling an unwanted electronic product is for it to be reused. Since California has no direct control on its exports, it cannot adopt the Basel Convention's terms and allow the export of e-waste to an accepting country to be dismantled for its raw material for reuse. However, consumers can donate their working electronic products to local schools and nonprofit organizations that can use them, freeing up their limited budgets for other worthy purposes. Also, for-profit companies can accept electronic products that have not reached the end of their lives and fix them for resale.¹⁸² States like Washington created incentives for reuse by awarding bonuses to charities that collect electronic products mainly for the purpose of reuse.¹⁸³

Fourth, California should require all distributors of new electronic products to accept, free of charge, the products they sold that are now regarded by customers as waste. California already has a similar system in place with its California Cell Phone Recycling Act of 2004, which requires all retailers to accept used cell phones from their consumers at all of their locations.¹⁸⁴ Since its inception, California estimates that retailers have prevented thirteen percent to twenty-five percent of cell phones sold in California from ending up in landfills.¹⁸⁵

Also, many computer companies and retailers have already proactively implemented their own "take-back" programs. Hewlett-Packard and Staples offer their customers many convenient options to trade-in various electronic products for cash or credit toward newer models. Customers can drop off their used products at any Staples location or mail it in.¹⁸⁶

In addition to all of its Apple products, Apple will take back any brand of computer or monitor for recycling.¹⁸⁷ Looking internationally, the WEEE directive requires producers and distributors to set up and

¹⁸² Jason Cipriani, *Five Websites that Turn Your Used Electronics into Money*, CNET (Feb. 29, 2012), www.howto.cnet.com/8301-11310_39-57387169-285/five-web-sites-that-turn-your-used-electronics-into-money/.

¹⁸³ ELECS. TAKE BACK COAL., *supra* note 26, at 6.

¹⁸⁴ CAL. PUB. RES. CODE § 42494 (LexisNexis 2014).

¹⁸⁵ *Id.*

¹⁸⁶ *HP's Takeback Program*, ELECS. TAKE BACK COALITION, www.electronicstakeback.com/how-to-recycle-electronics/manufacturer-takeback-programs/hps-takeback-program/ (last updated Jan. 2013).

¹⁸⁷ *Apple's Takeback Program*, ELECS. TAKE BACK COALITION, www.electronicstakeback.com/how-to-recycle-electronics/manufacturer-takeback-programs/apples-takeback-program/ (last visited May 6, 2014).

operate their own take-back programs.¹⁸⁸ This directive not only places the responsibility and costs upon companies profiting from electronic products, it also alleviates the enormous cost of regulating and maintaining the state's programs. With so many examples and programs in place, California could choose the best working solutions from each program and tailor them to solving its own e-waste crisis.

Lastly, many states, including California, face the challenging task of verifying compliance and safe handling. As stated above, there are two third-party accredited auditors with certification programs that focus on responsible recycling practices and best management practices.¹⁸⁹ Currently, becoming e-Stewards or R2 certified is voluntary, both federally and in California. However, the County of Santa Clara, California,¹⁹⁰ recently passed the e-Stewards Recycling Ordinance requiring all of its county e-waste recyclers to be participants or certified by e-Stewards.¹⁹¹ If a county in California could mandate such a requirement, then the State of California should also be able to mandate its recyclers and handlers to join one of these certification programs in order to ensure that e-waste in California is handled responsibly.

VI. CONCLUSION

In order to help fix the global e-waste crisis, California first needs to find a plausible way to curb the illegal disposal and low recycling rate happening in its own communities. By learning from other nations, states, and its own mistakes, California can lead the way in finding better, more reasonable ways to encourage reuse, recycling, and e-waste reduction. Until the federal government can pass a law encompassing the entire life cycle of an electronic product, California must look at the bigger picture and incorporate new strategies that reduce the amount of waste manufacturers produce from the design stage of a product to the end of its usefulness.

¹⁸⁸ *Waste Electrical and Electronic Equipment*, *supra* note 144.

¹⁸⁹ *Certification Programs for Electronics Recyclers*, *supra* note 121.

¹⁹⁰ CNTY. OF SANTA CLARA, CAL., CODE OF ORDINANCES no. NS-517.79, 8-9-11 § B11-522 (2011).

¹⁹¹ News Release, Cnty. of Santa Clara, Supervisors Adopt E-Stewards Recycling Ordinance for the Unincorporated County (June 23, 2011), *available at* www.sccgov.org/sites/opa/nr/Pages/Supervisors-Adopt-E-Stewards-Recycling-Ordinance-for-the-Unincorporated-County.aspx.